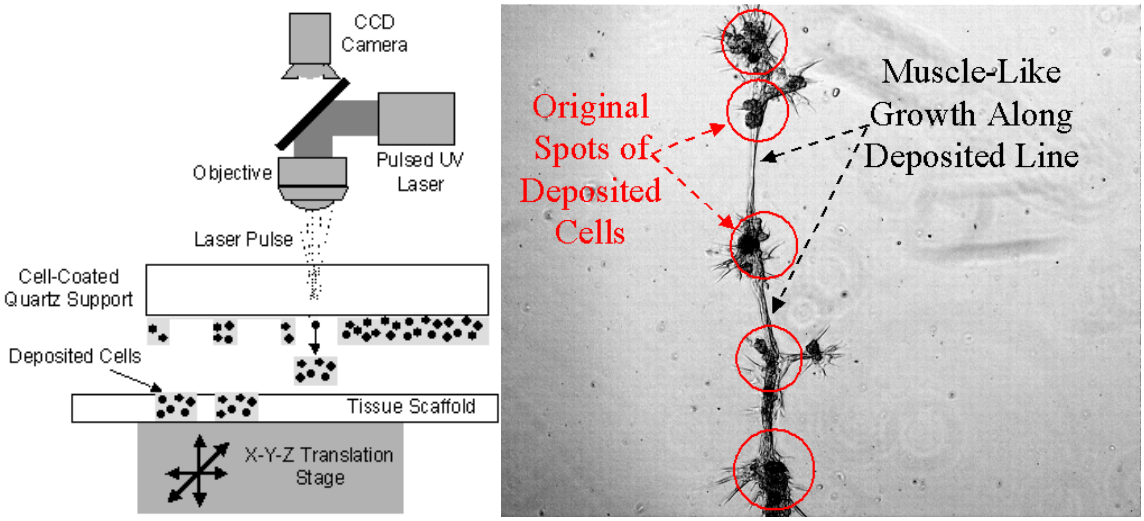
LASER DIRECT WRITING OF BIOMATERIALS



We have developed a novel laser forward transfer technique to fabricate novel 2-D and 3-D biomaterial structures including protein and antibodies arrays and even constructs of living eukaryotic and prokaryotic cells. At the heart of this technology is the ability to rapidly build, by a CAD/CAM process (i.e., Rapidly Prototype), for example, engineered tissue constructs cell-by-cell, layer-by-layer, and unit-by-unit in order to simulate or facilitate native heterogeneous structured tissue. Powered by this breakthrough in biomaterial processing, we can now produce improved protein array biochips as well as to enhance the understanding, development, and exploitation of the field of tissue engineering by the ability to group and order specific, defined populations of cells and bioscaffolding with precision. The eventual goal is to demonstrate specific biological function by engineering tissue constructs consisting of defined mammalian cell populations.

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